

uninhabitable even in summer. Our method was tried in these rooms in the following manner:—A mastic was composed, consisting of one part linseed oil, boiled with one-tenth of its weight of litharge, and two parts of resin. The latter was melted in the lithargized oil in a cast-iron vessel, the fire being duly regulated. The substances tumefied considerably at first, but, the fusion once completed, this effect ceased: the composition was suffered to cool, to be again heated for use. The tumefaction which takes place requires that the resin should be dissolved in the oil by degrees, otherwise it will overflow. The walls being very damp, it was necessary to dry them by means of a portable furnace."

The plaster was first thoroughly dried, then heated piece by piece, to enable the mastic to penetrate it: the mastic was applied without intermission till the plaster ceased to absorb.

A similar way of rendering pavements dry is also described. Vitruvius recommends a mixture of oil and lime as a cement well calculated to exclude damp from pavements.

This subject, which can scarcely be called a dry one, deserves further consideration.

PROFESSOR COCKERELL'S LECTURES ON ARCHITECTURE.

THE fifth lecture of this course was delivered on Thursday, the 1st instant. The professor began by expressing a hope that, in speculating on the subject of classical art, he had not disseminated an idea that no other school was worthy of one regard. Each system had its proper application. He believed that the supremacy of classical art was incontrovertible as was our superiority in mental and moral philosophy, and every discovery tended to the establishment of this fact. The Greeks ever would be our masters in art, and those who followed them, as the Romans and the artists of the Revival, had their proportionate measure of our regard.

He remarked, that if we looked to the commentators on Vitruvius, we were struck with their comparative ignorance of things with which we had become well acquainted. In his own time, great advances had been made, down to the discovery of the *scamilli impares* in Athenian buildings, by Mr. Penrose, and he inferred that we were only on the threshold of accurate knowledge of the principles of all that we now so empirically admired. In proportion, especially, we had much to learn, and he considered that there was room for glory to our own country, by a new edition of Vitruvius.

The progress of investigation, from time to time demanded fresh examination of all subjects. In the history of Greece and Rome, all early histories were now as waste paper in medieval architecture, the statements of the earlier writers, since the labours of Professor Willis, would have to be re-cast. It was to the abuse, and not the use, of classical architecture that certain of his strictures had been directed. He recommended a latitudinarian spirit, rather than one of bigotry, in regard to style. Each peculiarity of architecture had its application to time and place. Nature was eminently latitudinarian, but nevertheless was governed by principles. He had therefore recommended the study of nature, and it was better to become pupils of her than of Ictinus, Phidias, or Inigo Jones.

Quoting a passage from Alberti, to the effect that beauty was never distinct from utility, he remarked that utility was the characteristic of the Roman works, which were those of engineering, and the same might be said in England, for though he had never found any objection expressed to beauty in a design, he had certainly never found it enjoined as a necessity.

On the subject of proportion, the professor remarked that each master had a theory of his own. In some measure we all judged by a natural instinct, and we flattered ourselves that we had an eye for proportion. But, whilst, as Vitruvius said, other men than the artist could discover the good and the bad, the difference between the artist and the work-

man was, that one could foresee, and the other could not. He urged the importance of the study of proportion, in order to avoid those lamentable failures of which there were such frequent instances. The architect of a building often found too late, that with more modesty, and with good advice, and repeated study in drawing, and above all by models, he might have better attained the effect which he sought to impress upon the child of his hopes. Yet the architect should not consult too much his friend, nor too much his enemy, but rather endeavour to avoid the prejudices of each. He impressed upon his hearers the importance of recollecting the wonderful power of proportion. By it, not only character, but magnitude was given to a building: it could make the small look large, and the large look small. In illustration of the former characteristic, he quoted a passage from an author, descriptive of a small figure of Hercules, which, though it might be held in the hand, as you looked at it seemed to expand into a colossus; and of the latter, he instanced the interior of St. Peter's, at Rome, which was so ill devised that it actually appeared smaller than it was, a great error, and in expense extravagant in proportion to the result. Why were these opposite effects?

Proportion, he defined to be of three kinds:—1st. Proportion of elements, expressed in the orders; 2nd. Proportion of cubes and solids, which would govern that of halls and apartments; and 3rd. The proportion of areas, courts, and squares. In the orders we found expressed, in the most perfect manner, the charm of quantities. The best masters had constantly devoted their attention to these features of architecture; so much so, that Wren complained, that architects attended to them as though they were the whole matter of the art. In considering the question of magnitude, it was to be remarked, how in the early Doric there were larger capitals and rapidly diminishing shafts, as compared with the late Doric, in which we noticed a gradual tendency to the vertical and pyramidal. Greek architecture was characterised by a certain finality, and it resulted from that characteristic, that where applied as a lower story it was bad, as we saw it in Buckingham Palace. He inferred that it was bad to diminish greatly the Doric in street architecture, and that it was from this application of it by the Romans that the altered diminution resulted. He inferred, too, that the large capital was found incompatible with the altered position, and that it was intended to give magnitude by being diminished.

The Grecian Doric order, when alone, would never look large; whilst the Roman columns, as that of Trajan, shewed the perfect consideration for this object of proportion. In the Corinthian order, varying the height of the capital altered the appearance of length in the columns; a lofty capital made the column look short; whilst by diminishing the capital, magnitude was attained. Similar means were apparent in all three of the orders. The system was found in the Parthenon especially. He found from Vitruvius, that the ancients recognised that the proportion should alter with the magnitude. In the temple of the Giants at Agrigentum, the columns of which had a diameter of 13 feet, we found base mouldings,—an entirely new feature in the Grecian Doric. At Paestum, instead of the ordinary number, the columns had each twenty-four flutes. But at Sunium, where they were small, and where breadth of effect in the temple, viewed from the sea, was desirable, they had sixteen flutes. I am not, said the architect, raising a toy or a model, but a building in which I must take into consideration all circumstances of size and position. He thought, therefore, that had he large columns to deal with, he should increase the number of the flutes, and diminish the capitals, whilst in small columns he might have sixteen or twelve flutes. As we found in nature, the youthful face had smooth outlines; but with the new dignity of strength and manhood, the features became more marked. The oak, as a young sapling, differed in like manner from the full grown tree, with its arms set at right angles, and the corrugated surface of its bark. To give magnitude, therefore, multitude of parts was necessary. Comparing the front of St. Peter's at Rome with that of the Parthenon,

how inferior was the former. The four columns in the front were of immense size, yet the façade was one which would have been better suited to a parish church than to so vast a cathedral. It was to give magnitude that the new Parthenon had eight columns, instead of six, the number in the former building.

The professor then alluded to a theory which he had broached in former lectures, and which will be found referred to in our reports—viz., that beauty of proportion arose from inequalities. He illustrated this by diagrams, comparing the unequal disposition of parts in the man, with the opposite mode of distribution in the monkey. In like manner the horse was contrasted with the ass. The principle was shewn to be of similar value in proportioning the heights of stories in houses. This, he said, was the *Euprosia* of Vitruvius.

Vitruvius had given directions for observing the different "styles" or dispositions of columns, as 1) diameters apart for the pycnostyle, and so on. These directions were very important; but there was another practical point to be considered along with this—viz., varieties of height, according to the character of the building, whether tall or short. Now, this had never been sufficiently well attended to, for the commentators had drawn their illustrations to all scales, or according to the size of the paper. To render this as clear as requisite, the different "styles" should have been drawn to the same scale. Taking the pycnostyle and aræostyle as the two extremes, it would then be apparent there were certain characters; as in the latter instance, the low and compressed, and in the former, the tall—the other "styles" ranging between these extremes. Each of these distinct orders of disposition, no doubt, had its appropriate application. Now, instead of observing such a system as that here shadowed forth, each of us had a type by which we measured all things. One artist invariably made his figures tall, another short—but this was not nature. An architect, wanting a door, would go to an example, or to Sir William Chambers, and, without reflecting, would apply any proportion or size of aperture indifferently to a broad or tall disposition of columns. The professor shewed that in the aræostyle the door should be large in proportion to the order; whilst, in the pycnostyle, the opposite method should be practised; and so, he said, every aperture, and indeed every stone, should have a general harmony with the design and character of the particular building. But, in opposition to this, one master was for the broad, another for the narrow gauge.

The professor vindicated the authority of Vitruvius from the aspersions cast upon it, through ignorance of its true value, as shown in the instance he had given, by modern writers, who were certainly not artists. He quoted the lines from the *Iliad*, in which Helen describes the figures of Agamemnon, Ulysses, and Ajax, and said that these were no doubt designed by the poet to express what we found in the works of Albert Durer, Titian, and sometimes Raffaele, viz., character. Each of the characters we might affect had its own proper modulus or type, and by applying each in its place, we obtained that contrast and beauty which was the charm of architecture. He instanced the guard-house at Cologne, by Schinkel, as admirably suited to its position. He also mentioned Nottingham Castle, said to be a work of Inigo Jones, which contained some singularities, but had an admirable effect at a distance. Another building was the Loggia of the merchants, at Venice, by Sansovino. It was only 30 feet high, and in any case, to give dignity to a building which was at the foot of a tower 300 feet in height, was not easy. The professor pointed out how this was effected, and said that the result was a low compressed character, which was in complete contrast with the tower above. Sansovino, on other occasions, had shown how he could feel like an artist, when he had opposite circumstances to deal with, when he adopted the tall character: his art was not that of a hog; he suited the character to the place. In giving examples of successful attention to these principles, the church of St. Paul, Covent Garden, could not be forgotten, as an instance of the fine effect of the low broad character.

It would be recollected, the professor said, in